

**REMARKS**

Claims 1 and 3-5 are currently pending, none of which have been amended. No new claims have been added. It is respectfully believed that no new matter has been introduced.

Claim 1 stands rejected under 35 U.S.C. §103(a) as obvious over USP 5,267,859 (Discko) in view of USP 5,330,440 (Stanners).

Applicants respectfully traverse this rejection.

The invention set forth in claim 1 is a drug syringe comprising: a barrel which is provided with a nozzle mounting portion at a distal end thereof; a plunger which is provided with a gasket capable of sliding hermetically along an inner wall of the barrel at a distal end thereof and inserted from a proximal end of said barrel; and a nozzle which is freely detachable with said nozzle mounting portion, said nozzle including a mounting portion on the proximal end side which is provided with means for mounting to said nozzle mounting portion and a discharging portion which extends bending at a predetermined angle from this mounting portion, wherein said discharging portion located at a distal end side of a bended portion of said nozzle is formed so as to become thinner at a tip thereof in a tapered shape.

The present invention provides a drug syringe capable of using a nozzle of an appropriate size and angle, in accordance with an injection region, with a tip which does not fall off even under high pressure.

On page 2 of the Office Action dated April 20, 2004, the Examiner suggests that **Discko** discloses a barrel (16) (allegedly corresponding to barrel (1) of the present invention) which is provided with a nozzle mounting portion at a distal end thereof; a plunger (20) (allegedly corresponding to a plunger (2) of the present invention) which is inserted from a proximal end of said barrel; and a nozzle (12) (allegedly corresponding to a nozzle (3) of the present invention) which is freely detachable with said nozzle mounting portion, wherein said nozzle includes a mounting portion on the proximal end side which is provided with means (126) for mounting to said nozzle mounting portion, and a discharging portion (130 and 140) which extends bending at a predetermined angle from this mounting portion, wherein said discharging portion located at a distal end side of a bended portion of said nozzle is formed so as to become thinner at a tip thereof in a tapered shape, see Figure 3 (or alternatively, Figs. 4, 5 or 6).

The Examiner concedes that “**Discko** does not disclose that the plunger is provided with a gasket capable of sliding hermetically along an inner wall of the barrel at a distal end thereof.” In an attempt to remedy these admitted deficiencies of **Discko**, the Examiner suggests that **Stanners**

discloses that gaskets (6a and 6b) are used to encircle a piston to create a seal (col. 7, lines 56-57).

As a result of the above, the Examiner suggests that it would have been obvious to provide a gasket in the **Discko** device in order to create a seal as taught by **Stanners** around the plunger as would be desirable for expelling material.

However, there is a clear difference between the structure of the present invention and the structure of the **Discko** device. Thus, it would not have been obvious to one of ordinary skill in the art at the time the present invention was made to modify **Discko** with the teachings of **Stanners**.

A number of differences between the **Discko** device and the present invention are described herein. The present invention has a structure wherein a liquid is filled into a barrel, and **Discko** has a structure wherein a liquid is filled into a nozzle (12) from the beginning because the nozzle portion (12) is a cartridge system. In other words, **Discko** does not have a structure wherein a liquid (that is, dental material) is filled into a barrel (16). This is clear from the fact that the part 12 of Figure 1 of **Discko** is described, not as a nozzle, but as a cartridge (col. 3, line 12), and furthermore, it is described that ... a cartridge 12 for holding a viscous dental material (that is, liquid) ... (column 3, lines 21-22).

Applicants interpret the disclosure of **Discko**, with reference to Figures 1 and 2, as follows:

A dental material is filled into a body portion (30) of a nozzle (12) (described as a cartridge (12) in **Discko**), a piston (28) is provided at an open end (42) of the nozzle (12), a rear flange portion (26) of the nozzle (12) is provided at a breach opening (18) of an end portion of the barrel (16) of the syringe (10), the piston (28) inside the open end (42) of the nozzle (12) is advanced by an end tip (that is, a plunger tip (22)) of the plunger (20) of the syringe (10) so that the dental material M in the body portion (30) of the nozzle (12) is squeezed from the nozzle (12) (see col. 3, lines 12-16 and 56-60, for example).

As noted above, dental material is not filled in the interior of the barrel (16) of **Discko**. On the contrary, in **Discko**, a part which is provided in the interior of the barrel (16) is a plunger (20), and the plunger (20) is used to advance the piston (28) in the nozzle (12) due to the end tip (22).

Accordingly, in view of the foregoing, it is clear that a plunger (20) capable of sliding along an inner wall of the barrel (16) is not required in **Discko**. **Discko** does not disclose such a structure. On the contrary, in **Discko**, a portion to be hermetic is that between the piston (28) and the inner wall.

In the present invention, firstly a liquid is filled into a barrel (1), and then it is squeezed to a detachable nozzle (3) by use of a plunger (2). On the contrary, in **Discko**, a liquid (that is, dental material M) is not filled into a barrel (16). In **Discko**, the portion where a liquid (that is, dental material M) is filled into is a portion inside a nozzle (12) (that is, cartridge (12)) provided at an end portion of a barrel (16). In other words, dental material M is not placed in **Discko's** barrel (16), and dental material M is placed in **Discko's** cartridge (12).

Accordingly, the system and structure of **Discko** are completely different from that of the present invention. The system and structure of **Discko** may be easily distinguished from that of the present invention.

In view of the foregoing, **Discko** fails to describe, teach, or suggest the following features set forth in claim 1: "a plunger which is provided with a gasket capable of sliding hermetically along an inner wall of the barrel at a distal end thereof and inserted from a proximal end of said barrel", in combination with the other claimed features.

Because of the above-described system and structure of **Discko**, it would not have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify **Discko** by providing "a plunger which is provided with a gasket capable of sliding hermetically along an

inner wall of the barrel at a distal end thereof and inserted from a proximal end of said barrel” to the **Discko** device.

Applicants respectfully believe that it is not reasonable for the Examiner to state that it would have been obvious to provide a gasket in the **Discko** device in order to create a seal as taught by **Stanners** around the plunger as would be desirable for expelling material (see page 3, lines 2-4 of the Office Action dated April 20, 2004).

As mentioned above, no liquid is filled into barrel (16) of **Discko**. Thus, there is no requirement for **Discko**'s plunger (20) (sliding in barrel (16)) to be provided with a gasket so as to be hermetic. Furthermore, there is no suggestion to provide **Discko**'s plunger (20) (sliding in barrel (16)) with a gasket so as to be hermetic.

In view of the foregoing, the Examiner's proposed combination of **Discko** and **Stanners** is respectfully believed to be unreasonable.

As mentioned above, it would not have been obvious to a person having ordinary skill in the art at the time the present invention was made to arrive at the invention set forth in claim 1 by a combination of **Discko** and **Stanners**.

**Discko** and **Stanners**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1: “a plunger which is provided with a gasket capable of sliding hermetically along an inner wall of the barrel at a distal end thereof and inserted from a proximal end of said barrel”, in combination with the other claimed features.

Thus, Applicants respectfully submit that this rejection of claim 1 should be withdrawn.

Claims 3-5 stand rejected under 35 U.S.C. §103(a) as obvious over **Discko** in view of **Stanners** and USP 5,047,021 (**Utterberg**).

Applicants respectfully traverse this rejection.

**Utterberg** discloses a male luer lock medical fitting, and does not describe, teach, or suggest “a plunger which is provided with a gasket capable of sliding hermetically along an inner wall of the barrel at a distal end thereof and inserted from a proximal end of said barrel”.

**Utterberg** fails to remedy the above-described deficiencies of **Discko** and **Stanners**.

**Discko**, **Stanners**, and **Utterberg**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1: “a plunger which is provided with a gasket

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capable of sliding hermetically along an inner wall of the barrel at a distal end thereof and inserted from a proximal end of said barrel", in combination with the other claimed features.

Thus, Applicants respectfully submit that this rejection of claims 3-5 should be withdrawn.

In view of the aforementioned remarks, claims 1 and 3-5 are in condition for allowance, which action, at an early date, is requested.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,  
HANSON & BROOKS, LLP

*Nicholas S. Bromer* (REG. NO. 37,806)

Nicholas S. Bromer  
Attorney for Applicants  
Reg. No. 33,478

NSB/DRC/nrp  
Atty. Docket No. 010477  
Suite 1000  
1725 K Street, N.W.  
Washington, D.C. 20006  
(202) 659-2930



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